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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,222	12/04/2003	Jae-Bon Koo	6161.0114.US	4976
58027	7590	08/15/2006	EXAMINER	
H.C. PARK & ASSOCIATES, PLC 8500 LEESBURG PIKE SUITE 7500 VIENNA, VA 22182			LANDAU, MATTHEW C	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/727,222

Applicant(s)

KOO ET AL.

Examiner

Matthew Landau

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-19 and 21-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-16,18,19,21,24 and 26 is/are allowed.
- 6) ☒ Claim(s) 17,23,25 and 27 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “the first angle larger than the second angle” (claims 17 and 23), the first angle is about 90° (claim 25), and the second angle is about 0° (claim 27) (in conjunction with the limitations of claim 16) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 23, 25, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 17 and 23, the limitation “wherein the first angle is larger than the second angle” renders the claim indefinite since claim 16 (from which these claims depend) requires that the second angle is larger than the first angle.

Regarding claims 25 and 27, the limitations “wherein the first angle is about 90°” and “wherein the first angle is about 0°” render the claims indefinite since claim 16 (from which these claims depend) requires that the second angle is larger than the first angle.

### ***Claim Objections***

Claim 22 is objected to because of the following informalities: the limitations “wherein an angle between...” and “there is a second angle between” are objected to since claim 16 already defines first and second angles. The angles defined in claim 22 clearly refer to different angles than those defined in claim 16. It is suggested the limitations be changed to “wherein there is a third angle ~~an angle~~ between...” and “there is a fourth ~~second~~ angle between...” (or something equivalent). Appropriate correction is required.

***Allowable Subject Matter***

Claims 1, 4-16, 18, 19, 21, 24, and 26 are allowed.

Claims 17, 23, 25, and 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 22 would be allowable if rewritten to overcome the claim objection set forth in this Office action.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including wherein the direction of current flow in the channel area of the switching thin film transistor and the direction of current flow in the channel area of the driving thin film transistor are formed so that a current mobility in the channel area of the switching thin film transistor is larger than a current mobility in the channel area of the driving thin film transistor.

Regarding claim 16, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including the second angle is larger than the first angle.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

Applicant's arguments filed June 8, 2006 have been fully considered but they are not persuasive.

Regarding the drawing objections, Applicant argues that a previous response filed June 16, 2005 overcame the drawing objections, as evidenced by the fact that the Examiner withdrew the drawing objections in the subsequent Final Action mailed August 29, 2006. It is not clear why the drawing objections were vacated since Applicant's response did not overcome those objections. In the response filed June 16, 2005, Applicant argued that the claimed subject matter (claim 17) was shown in Figure 6 and discussed on page 16, lines 7-15 of the Specification, and that the "first angle" recited in claim 17 refers to the angle of the primary grain boundaries with the direction of current flow in the channel area of the switching transistor. However, it is clear from the language of claim 16 that the claim "first angle" does not refer to the angle of the primary grain boundaries with the direction of current flow. Claim 16 states that "the switching thin film transistor has a first angle between a length direction of polycrystalline silicon grains and a direction of current flow in the channel area". Clearly, the "length direction of the polycrystalline silicon grains" is the vertical direction shown in Figure 6. Therefore, Figure 6 does not show the subject matter of claim 17 (or claims 23, 25, and 27).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew C. Landau

August 7, 2006

A handwritten signature in black ink, consisting of a series of vertical strokes followed by a horizontal stroke that curves upwards and to the right.

**KENNETH PARKER**  
**SUPERVISORY PATENT EXAMINER**